**International Associations of Science and Technology for Development (IASTED)
Conference Titled "Computers and Advanced Technology in Education" (CATE 2007).
Beijing, China. Oct 8-10, 2007.**

# eIntegration Challenges For Rectors and Deans in Higher Education Institutions in Saudi Arabia

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**ABSTRACT**
The study aimed at finding out whether online courses are currently used at Saudi higher education institutions, in which majors online courses are offered and which delivery systems are used. It was found that only 6 universities (43%) are currently offering online courses using WebCT or Blackboard. The amount and type of online courses offered are not proportionate with the number of colleges, departments and faculty at those universities. The current use of WebCT and Blackboard is not cost-effective. Lack of motivation, online teaching skills, training in technology integration, administrative support, inadequate infrastructure and funds contribute to the inadequate use of online courses. Since integration of technology in higher education is inevitable, a number of recommendations for the successful adoption, integration and use of online instruction are given.

**KEYWORDS**
online course, WebCT, Saudi, integration, university.

## 1. Introduction:

The number of schools, institutions and teachers using online courses is growing at a phenomenal rate. For example, www.elearners.com has more than 103 e-colleges offering 352 e-programs, 3755 e-courses and grant 756 degrees. Moreover, more than 3300 colleges and universities and more than 35,000 instructors and 250,000 students, companies and organizations worldwide are currently using online courses with Blackboard. Since January, 1998 a total of 1,348,841 users have used the ICA (www.nicenet.org) and 81,477 users sign on and 11,808 classes are used per month.

Furthermore, several studies have shown a high frequency of online instruction at the high school and college levels. A survey of the state departments of education by Thomas (2001) indicated that all 16 Southern Regional Education Board states have high school students receiving courses electronically. Most universities and instructors in Florida meet the distance learning standards set by the Higher Education Policy with minor differences in application (Sparrow, 2002). Over 80% of 653 respondents from EU organizations were suppliers or users of e-learning and 60% were both suppliers and users. In 2001, e-learning sales accounted for 23% of total income of suppliers of equipment and infrastructure; for users, e-learning-related investment constituted 13% of expenditure on capital equipment for training; and 14% of total spending went to e-learning-related content (Ward, Harrison & Massey, 2001). In developing countries like Oman, Sultan Qaboos University started to use e-courses in 2001, with 8 online courses used by 981 students. In 2002, the number of courses offered went up to 40 online courses used by 3001 students (AlMusawi & Abdelraheem, 2004). However, Latin American and Caribbean countries suffer from significant deficits in productivity, skills, and technology (de Ferranti, Perry, Gill, Guasch, Maloney, Sanchez-Paramo & Schady, 2003).

Why do some schools, colleges and instructors integrate technology in instruction while others do not? Findings of prior studies found several factors to impact technology integration in the classroom. For example, Willis (2001) reported that state-mandated objectives associated with Texas Assessment of Academic Skills, end-of-course exams, and technological skill levels influenced the degree of difficulty in managing logistical issues related to technology integration. Career goals of the individuals influenced their integration of technology into the classroom curriculum. Constructivist-oriented teachers experienced less difficulty integrating technology in learner-centered activities; and simultaneous change cycles experienced by teachers affected the technology integration process (Willis, 2001). Wilson (2000) also found that some faculty are intrinsically motivated to use instructional technology to improve student learning. Others use the Internet, computer software, and multimedia in instruction to fulfill their teaching needs (Davidson & Tomic (1994), Reis (1995), and Sivert & Egbert (1995). Bathe(2001) reported factors such as personal interest and perceived need on the part of faculty, technological and pedagogical support available to faculty, use of overload or reassignment time to pay faculty for the development of online courses and providing incentives for faculty to motivate and support them in developing and teaching online courses (Bathe, 2001). Moreover, teachers were more positive toward technology integration following a training course and were using

technology more in the classroom. Although teachers do not usually alter their existing teaching methods as they integrate technology, they use technology in ways that support their current classroom practices (Beatty, 2003; Willis, 2001).

By contrast, several studies showed that the factors that inhibit the integration of technology in instruction are: When faculty were not compensated for online course development, when there was little pressure to develop online courses and when faculty viewed the use of multimedia in online courses negatively (Bathe, 2001). In another study, some instructors were unsure of the efficacy of distance learning, were unconvinced of personal involvement in distance learning, were under time pressure, were under-prepared in online instruction, were unrewarded for their work with technology, and were under-supported by the university infrastructure (Wilson, 2000). At Imam university in Riyadh, Saudi Arabia, two major barriers inhibited faculty and administrators from adopting online courses: Increased workload and lack of technical and administrative support (Al-Harbi, 2003). Finally, Pankowski (2003) found that most faculty do not receive adequate training to teach online. 23% of participants in Pankowski's study received no training before teaching online. Only 20% received training in active learning or fostering online student collaboration before they began to teach online.

As to the status of technology integration in Saudi Arabia, state universities have been gradually integrating technology at the administrative and academic levels since the introduction of the Internet in the year 2000. Many universities have OPAC's and electronic databases, have college and department website and online registration and grade reports for students. Personnel Departments can store and access faculty data online. At some universities, faculty can enter their grades and students' attendance. Upon request from the Ministry of Higher Education, journals, conference proceedings, and M.A. and Ph.D. theses are being published and accessed online. In the past few years, online courses and distance learning have become a focal point of interest at some universities.

Since use of online instruction at the college level will expose students and instructors to new teaching and learning modes and provide them with opportunities of communication, collaboration and sharing resources with other institutions within the Kingdom and abroad, and lack of use will create a technological gap, the author felt that there is a need for investigating the availability of online courses at Saudi universities and the extent of their use by faculty to find out whether they are keeping abreast of latest developments in teaching which have become a must at this age and time. The present study aims to find out whether Saudi state universities offer online courses and in which subject areas they are offered. It also aims at finding out the factors that affect the use of online courses by faculty, the challenges and obstacles that discourage faculty from creating and using online courses as perceived by university administrators (vice-presidents, deans, vice deans and department heads).

## 2. Study Populations and Samples:

All 14 state universities in Saudi Arabia were included in the study: King Saud, King Abdul-Aziz, King Fahad, King Khaled, King Faisal, Umm Al-Qura, Imam, Qassim, Taiba, Taif, Joaf, Hail, Jazan and the Islamic University in Medina. Seven samples of 10 university administrators were randomly selected from 7 universities. Each sample consisted of 10 administrators: A vice-president, 2 deans, 2 vice deans and 5 department heads. The sample of universities covered universities that offer online courses and those that do not. Each sample of administrators also covered colleges and departments that use online courses and those that do not.

## 3. Data Collection and Analysis

Each university website was searched for Online Course Management Systems like WebCT and Blackboard, the number of online courses offered, in which subject areas and for which college level they are offered, and whether training courses are offered for faculty. The author could not find out the exact percentage of college faculty using e-courses and could not tell which online course are actually being used, for which semester they are offered, how many students are registered in each course, and whether some faculty use several online courses, as she had no access to those online courses. She requested such information by e-mail but she never received any replies.

Second, to find out the factors that affect use of online courses, the subjects (vice-presidents, deans, vice-dean and department heads) were individually interviewed by phone. An open-ended questionnaire-survey was used to record responses. Findings will be reported qualitatively and where possible, percentages will be given.

## 4. Results

**4.1 Availability and Use of Online courses at Saudi Universities:** Findings of the present study showed that only 6 universities or 43% have subscription with Online

Course Management Systems (Blackboard or WebCT): King Saud University, King Fahad University, King Abdul-Aziz University, King Khaled Unviersity, King Faisal University, and Umm Al-Qura university. The total number and types of online courses offered are reported in descending order:

***King Faisal University*** offers 621 online courses with WebCT as follows: *Architecture (112 courses), veterinarian and animal science (94 courses), agricultural and food science (94 courses), science (74 courses), education (60 courses), administrative science (68 courses), community and applied studies (40 courses), medicine (25 courses), clinical Pharmacy (17 courses), applied Medical Sciences (16 course), computer science & and IT (10 courses), English (9 courses), and nursing (2 course).* It is noted that more courses are offered in architecture, veterinarian and animal science and agriculture and food science.

***King Saud University*** offers 89 courses in several colleges with webCT: *Engineering (35 course), computer science (16 courses), education (13 courses), computer systems (10 courses), computer engineering (7 courses), agriculture (6 courses), business (3 courses), anesthesia, architecture, dentistry, mathematics, Arabic language and library science (one course each).* 80% of the online courses are offered by the engineering and computer science colleges.

***King Abdul-Aziz University*** uses the ADDI system to develop online course in-house and offers them through their LMS system. It has developed and accredited 27 online courses that cover different freshman and sophomore courses such as: *Statistics, mathematics, chemistry, introduction to sociology, economics, public administration, accounting, English, geography and biology (one course).* Online courses are equally distributed among pure science and humanities majors.

***King Khaled University*** offers 12 online courses with WebCT as follows: *Arabic language (4 courses); dentistry, education, math (2 courses each); and Islamic Education (1 course).*

***Umm Al-Qura university (UQU)*** has a license with Blackboard, but no online courses are offered nor listed in the university website. Faculty can also download Moodle, an open source course, from the UQU website.

***King Fahad University (KFU)*** has a license with WebCT , but courses offered are not shown in the university website.

**4.2 Frequency of Using Online Courses:** Taking into consideration that King Faisal university has 10 colleges, King Saud University has 15 colleges, King Abdul-Aziz University has 13 colleges, King Khaled University has 9 colleges, King Fahad University has 6 colleges and Umm Al-Qura University has 11 colleges; each college has several departments; and each department offers many courses, it can be concluded that the number of online courses offered is too small. Taking into consideration that the number of faculty at King Faisal university is 868, at King Saud University is 7482, at King Abdul-Aziz University is 2458, at King Khaled University is 663, at King Fahad University is 964 and at Umm Al-Qura University is 1254, it can also be concluded that the percentage of faculty using online course is too minimal.

**4.3 Factors Affecting Use of Online Courses:** Results of the questionnaire-survey showed extrinsic (infrastructure, administrative support) as well as intrinsic (online instruction skills, motivation, personal factors) factors to affect the use of online instruction at Saudi State universities. Those are arranged in order of importance:

***Ministry Mandate:*** The Saudi educational system is centralized. All higher education institutions are dominated by the Ministry of Higher Education and they follow the same statutes, rules and regulations. All major educational change and innovation decisions are usually taken at the higher levels of the Ministry of Higher Education and passed down to the universities. The subjects reported that introducing distance learning requires approval and a directive from the Ministry of Higher Education.

***Technology Integration Vision:*** Most Saudi state universities do not have a long-term plan for integrating technology in instruction. Technology integration has always been a slow process.

***Faculty Issues****:* All the subjects indicated that most faculty are not trained in online instruction and using e-mail and Internet resources in teaching. Although 50% of the faculty can use the computer, have an e-mail and can browse the Internet, fewer than 5% can use online courses including faculty specialized in educational technology, computer science or engineering. Only 4 universities are currently offering training in online instruction: King Faisal University offers 76 training courses that cover online course basics, webCT tutorials, templates and course design. King Saud University offers 70 WebCT training courses and has an online tutorial. King Khaled University has online word and PDF files that provide information on online course content design, stages of developing online courses,

and a video report on e-learning. King Abdul-Aziz University has an online tutorial.

In addition, subjects reported that even when such training courses are offered, many instructors cannot join them because they are not given time off for training. They are busy with meetings, committee work and other administrative and academic commitments.

Moreover, deans and department heads indicated that many faculty are not pressured to develop online courses or teach online by their colleges. Creating online courses is done on a voluntary individual basis and is initiated by personal interest. Those who have online courses use them as a supplement to in-class instruction. Fewer than 1% are self-motivated and self-trained. They teach online or have their own online courses with Moodle or Nicenet even when their universities do not have a license with Blackboard or WebCT.

The subjects also pointed out that few faculty have negative attitudes towards online instruction. They feel that online instruction requires additional time and effort and that it will increase their teaching load. They are not sure of the effectiveness of online instruction and they are worried about cheating and plagiarism issues.

***Infrastructure issues**:* All the subjects reported that the technological infra-structure at their universities cannot accommodate all the students and faculty at their universities in terms of computer labs and terminals available and Internet access. Universities also have a limited bandwidth. Computers are down and the Internet is slow very often. Many departments do not have computer labs. When available, those labs are not equipped with sufficient numbers of computers, software or Internet connection. They are usually reserved for computer applications courses. The rest of the instructors and students cannot use them because of the large number of courses and students enrolled in them. Internet access from home is slow and frustrating. Many female faculty in the humanities colleges have no PC's and no Internet access in their offices. Students are given limited Internet access outside the main library and computer labs. For example, engineering students at KSU have free time and like to use the Internet to search for research related to topics under study, but they have no access to a wireless network, a computer lab or Internet access in their college. The computer network administrators usually worry about viruses and security issues

***Funds:*** The only source of income for state universities is the budget allocated and supplied by the Ministry of Finance. Other financial resources such as donations and endowments are restricted by the Ministry of Finance. The budget allocated to technology integration is limited. For example King Saud University has allocated about $21 million for technological upgrading and innovations.

***Administrative issues***: Due to the centralized system followed, any requests for change or funding has to go through a hierarchy of administrators. Requests and orders go through bureaucratic procedures and are usually processed slowly. Most universities have a computer and Internet committee that takes care of it technological needs and change. The committee members meet several times a year and members themselves may not feel the urge for using online instruction themselves are they are not online users themselves. Universities do not deal directly with WebCT, OCLC, Proquest, Gale or CSA. Local Internet providers or IT companies serve as mediators. Those mediators do not usually respond to users' requests and are slow in dealing with and solving problems.

***Online course Development and Support Center:*** With the exception of King Abdul-Aziz university, Saudi state universities do not have an online learning center. Online courses designers and content developers are very few. Online course curricula design are left to the discretion of the online course instructors. Online teaching requires team work, i.e. a team of content specialists and technology specialists. The online course material needs be approved by the department council in order to meet certain standards and to be supported by others. Standards, rules and regulations for using online courses are absent.

Due to the bureaucratic system, universities usually have one central technical support center with a limited number of staff and it cannot deal, manage, solve problems and provide technical support to large numbers of faculty and student users. In addition technical support engineers are not available for online courses.

***Student factors**:* About 50% of the subjects indicated that many students are still traditional especially those in the humanities colleges. They are not interested in using technology in learning, have no experience with technology and online instruction, and many do not know English. Some cannot use the Internet from home because they do not know how to use the Internet.

## 5. Discussion:

**5.1 Use of Online Instruction at Saudi Universities:**
It was found over 50% of Saudi state Universities do not offer online courses and do not have a license with Online Course Management Systems like WebCT and Blackboard. If they do, such Online Course Management Systems are underused or inadequately and improperly used. The current use is not cost-effective. The number of faculty using them and number of online courses offered are not proportionate with the total number of faculty and total number of courses offered at each university and even at a given department. Findings of the present study are consistent with findings of a study by de Ferranti, Perry, Gill, Guasch, Maloney, Sanchez-Paramo, and Schady (2003) which showed that Latin America suffers from significant deficits in productivity, skills, and technology compared with other countries.

Findings of the present study are inconsistent with the status of online instruction in the EU and USA or use of online courses at Sultan Qaboos University in Oman (Sparrow (2002), Ward, Harrison, & Massey, 2001, Al-Musawi & Abdel Raheem (2004).

Ward, Harrison and Massey (2001) found that over 80% of 653 respondents in the EU were suppliers or users of e-learning, about 60% were both suppliers and users. Larger organizations involved in VET and specialist companies producing training tools or content were more likely to use e-learning. About 30% of the time spent by users on training involved e-learning. Training suppliers estimated e-learning was responsible for about one-third of their total income from supply of training content and material in 2001. For suppliers of capital equipment and infrastructure, e-learning sales accounted for 23 percent of total income in 2001. For users, e-learning-related investment was responsible for almost 13% of expenditure on capital equipment for training in 2001; 14% of the total spending went on e-learning-related content.

**5.2 Barriers to Technology Integration at Saudi Universities:** The most important factor that affects use of online courses as reported by university vice-presidents, college deans, vice deans and department heads interviewed was lack of training in online instruction on the part of the faculty. Many instructors are not also motivated to use online instruction as they are not pressured to do so by the university or the Ministry of Higher Education and they have little faith in online instruction and its instructional effectiveness. Findings of the present study are partially consisted with the results of Al-Harbi study (2003) which he conducted at Imam University. He found that the most important factors that hinder the integration of technology at Imam University were: Too many work responsibilities and inadequate technical and administrative support. In another study, Charabaji, Al-Hajhouj and Beyruti (2006) investigated the cultural origins of differences in moving from talk and chalk to student-centered independent learning as described by university teachers in Lebanon and Saudi Arabia. They found that university culture background was important in determining variables such as familiarity, but age, perceived ease of use or how teachers felt about WebCt were not significant.

This finding is inconsistent with Wislon's (2000) study in which he found that faculty members at Kentucky Higher education institutions were intrinsically motivated to use instructional technology to improve student learning; unsure of the instructional efficacy of DL; unconvinced about personal involvement in DL; under time pressure; under-prepared in areas related to online instruction; unrewarded for their work with instructional technology; and under-supported by the university infrastructure.

In addition, Bathe (2001) found that personal interest and perceived need played a major role in online course development. Faculty and staff seemed to receive sufficient technological and pedagogical support. Overload or reassignment time was used to pay them for online course development. However, in some cases, faculty were not compensated for this development; there was little pressure to develop online courses; faculty viewed the use of multimedia in online courses negatively; those who preferred teaching online to teaching in the classroom represented only 15%. 17 students (35%) preferred classroom learning; many indicated that they were not prepared to take online courses; and faculty and administration were concerned about screening prospective online students, the quality of online courses and testing integrity. Artman (2003) also found that intrinsic and extrinsic motivators, and institutional supports can motivate faculty to participate in online education. Conversely, internal inhibitors and institutional barriers could reduce faculty motivation to become involved or continue involvement in online education. By reducing institutional barriers, increasing institutional supports, or providing extrinsic motivators, administrators can enhance faculty enthusiasm to participate in online courses, online degree programs or campus initiatives in online distributed education. Finally, Perreault, Waldman, Alexander & Zhao(2002) found that the professors primarily used self-training for the design and delivery of on-line courses and believed that technology was not sufficiently reliable.

## 6. Conclusion:

Online instruction is a new mode of learning. Saudi higher education institutions are in the process of integrating technology in the teaching-learning process to keep up with the latest developments in educational technology and e-administration. The study found several factors that negatively affect the integration of technology in college classrooms such as lack of trained, self-motivated faculty, inadequate infrastructure, lack of funds, administrative and technical support. The study recommends that the Ministry of Higher Education mandate the use of online instruction at colleges and universities by making it part of faculty evaluation and promotion requirements or by offering a raise for using online instruction. It is important for the university administration to be aware of the requirements of online instruction and the challenges involved, provide financial and technical support to help students learn in the best environment possible.

Universities should have a technology integration vision and plan, establish a center for developing online courses, set technology integration educational and technological standards such as: Course goals, course content, instructors' support to students, instructors qualifications, teacher evaluation, course delivery evaluation and so on.

Faculty members should be trained in online instruction, whether courses are fully delivered online or blended with in-class instruction to take advantage of the opportunities available for them, to help students achieve their best, and in order for use of Blackboard or WebCT to be cost effective. Joining online course training workshops by faculty members at all departments must be made mandatory and part of faculty evaluation criteria and promotion. They may be trained in low-peak periods at the beginning and end of each semester. Training should be conducted online with hand-on practice. Graduate students and pre-service teachers at the college of education may be also trained in online instruction, course design and material selection as an integral part of their professional preparation programs and graduation prerequisites.

Universities may proceed gradually. First blended learning can be used before courses are fully delivered online. Faculty members at the various universities may share and exchange electronic resources and expertise.

Upgrading plans should give priority to connecting women's campuses and female faculty offices with the Internet and to improving Internet services provided on men's campuses. Technical support while using online courses, maintenance, administration, technical planning and coordination, on-going training, course design and Arabization must be also provided.

Finally a partnership between universities and IT corporations in the private sector may be created in order to provide financial support. Arabic computer companies should help in Arabizing the software and online course management systems commands and tools, help in online course design and building Arabic websites to enable instructors to use Arabic online courses in all subject areas.

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